IN THE SPECIFICATION

Please change the Background of the Invention on pages 2 through 7 to read as shown below.

Change to:

This invention relates to a method of and system for ~~developing~~identifying and ~~continuously operating an automated, on-line risk transfer system~~measuring the tangible and intangible elements of value using predictive models and vector creation algorithms.

~~Managing a business in a manner that creates long term value is a complex and time-consuming undertaking. This task is complicated by the fact that traditional financial systems do not provide sufficient information for managers in the Knowledge Economy to make the proper decisions. Many have noted that traditional accounting systems are driving modern managers to make the wrong decisions and the wrong investments. Accounting systems are "wrong" for several reasons. One of the most obvious reasons - they track tangible assets while ignoring intangible assets. Intangible assets such as the skills of the employees, intellectual property, business infrastructure, databases, management processes, relationships with customers and relationships with suppliers are not measured with current accounting systems. This oversight is critical because in the present economy the success of an enterprise is determined more by its ability to use its intangible assets than by its ability to amass and control the physical ones that are tracked by traditional accounting systems. The absence of intangible asset information is particularly notable in high technology companies that are highly valued for their intangible assets and their options to enter new markets.~~

~~Even when intangible assets have been considered in risk analysis, the limitations in the existing methodology have severely restricted the utility of the information that has been produced. All known prior efforts to value individual intangible assets have been restricted to independent valuations of different types of assets with only limited attempts to measure the actual impact of the asset on the enterprise that owns it. Some of the intangible assets that have been valued separately in this fashion are: brand names, customers and intellectual property. Problems associated with the known methods for valuing individual intangible assets include:~~

~~1. Interaction between intangible assets is ignored. For example, the value of a brand name is in part a function of the customers that use the product - the~~

more prestigious the customers, the stronger the brand name. In a similar fashion the stronger the brand name, the more likely it will be that customers will stay a long time. Valuing either of these assets in isolation will not provide a meaningful valuation; and;

2. The value of an intangible asset is a function of the benefit that it provides the enterprise. Therefore, measuring the value of an intangible asset requires a method for measuring the actual impact of the asset on the enterprise - something that is missing from all known existing methods.

Another aspect of the increasing importance of "intangible" assets is the fact that the primary risks faced by most companies have now shifted from hard asset damage (fire, flood, etc.) to soft asset impairment or loss. A recent study found that between June 1993 and May 1998, ten percent of the Fortune 1000 lost more than one quarter (25%) of their total shareholder value in one month. Almost two thirds of these "large losses" were caused by problems related to intangible assets.

The deficiencies of traditional accounting reports exacerbate the difficulty companies face when reporting problems with intangible assets because:

1. The absence of regular reporting means that all problems with intangible assets come "out of the blue"; and

2. The absence or regular reporting makes it difficult to monitor company efforts to correct the problems.

Given the absence of reporting on many of the intangible assets driving the success of companies in the Knowledge Economy, it should not be surprising to learn that traditional accounting systems are also deficient in reporting significant information relevant to the liability side of the balance sheet. Traditional financial statements footnote or in some cases ignore large potential liabilities including: loss from litigation, environmental clean-up costs and shortfalls on leasing revenues. The absence of routine reporting on these risks does not alter the fact that they have a material, negative impact on the value of the company that has these risks. Recent studies completed at Oxford University have confirmed that "off balance sheet risk" has a negative impact on market value for firms that have these risks.

This negative impact of these risks on market value can be substantial. A recently completed study found that exposure to future, un-booked liabilities for environmental cleanup reduced share price by an average of 16% for electric utilities targeted by the Clean Air Act Amendments of 1990. It is worth noting that as more information became public regarding the actual cost of the environmental cleanup and pollution abatement the reduction in share price moderated. A transparent analysis of the liability associated with the environmental cleanup would have given the market the information required to more rapidly reach the proper conclusion regarding the impact of these new costs.

In addition to risks from intangible asset impairment and unrecognized liabilities, companies face other risks that are more readily analyzed. These risks are shown in Table 1.

Table 1

Risks that are typically analyzed
1. Foreign exchange risk;
2. Interest rate risk;
3. Portfolio risk;
4. Credit risk; and
5. Commodity price risk;

These risks are usually analyzed using a standardized risk analysis product such as Dun and Bradstreet's Risk Assessment Manager™ for credit risk and Barra's Cosmos™ System for portfolio risk. The analyses of the risks listed in Table 1 are generally completed in isolation so their impact on the overall firm is not clear and opportunities for natural "self hedging" aren't apparent.

Another problem associated with developing risk programs for isolated assets is that they have generated severe losses for firms that didn't fully understand the potential liability their "risk reduction programs" were creating. One of the most common mechanisms for minimizing the risks shown in Table 1 is to hedge the exposure using a derivative or option to "lock in" the maximum amount of exposure the firm is faced with over a given time period. In some cases, when the risk factors moved in a direction opposite to the direction being hedged (i.e. interest rates dropped when they were

~~expected to increase) the firm hedging its risk experience a far greater loss than any loss ever envisioned under the worst case analysis of their risk exposure.~~

~~Unexpected losses aren't the biggest shortcoming of traditional risk management systems. Because traditional risk management systems are driven by a statistical analysis of prior history, they are generally limited to dealing with events that vary within parameters that have already been experienced. The problem with this is that most large losses are caused by events that fall outside the bounds of normal experience (i.e. hundred-year floods and once-in-a-lifetime events).~~

~~It is also worth noting that the limitations of the general ledger accounting systems discussed previously (lack of information about intangible assets and off balance sheet risk) also extend to the risk analyses that are completed based largely on the information provided by general ledger systems. These same limitations also extend to the all known efforts to analyze and/or simulate the impact of changes in the business on financial performance and risk. Put simply – it is impossible to analyze the impact on risk with no prior information. The lack of detailed information on intangible assets and their impact on risk has also limited simulation products such as the Dynamic Financial Analysis (DFA) and the Small Business Financial Manager to projecting the impact of changes in revenue, expense or balance sheet items (tangible assets and financial liabilities) on financial performance. Given the growing importance of intangible assets to financial performance and risk, the utility of these systems is very limited. In a similar manner the lack of quantitative information on the impact of intangibles on financial performance has limited the usefulness of simulation products such as Tango that incorporate generic information regarding intangibles.~~

~~The complexity and relatively high cost of obtaining people that understand how to use the traditional risk analysis systems has generally limited the analysis and active management of risk to larger companies. This is ironic because large companies are the ones that are in the best position to absorb the risks that are being managed while smaller companies that don't have the resources to survive a large loss are left even more vulnerable by their inability to examine their risks in detail. Clearly, an automated system for developing comprehensive risk management programs for companies of all sizes would be beneficial.~~

~~However, even when comprehensive risk analyses are available the numerous coverage restrictions, general lack of precision in the policies and the high cost of~~

traditional insurance dissuade many from obtaining the coverage that could, in some cases, save their companies from financial ruin. The multi-line, multi-period insurance policies some firms are selling only partially alleviate these problems. At the same time, the lack of precision in the risks being covered is understandable in so far as the insurers have only very limited information about the actual risks being faced by the companies they are insuring. A system that provided the insurers with continuous, detailed information regarding the risks faced by their clients would clearly help alleviate this problem.

Another barrier to effective use of insurance and risk reduction products like derivatives is the time required to analyze and purchase them. In some cases the need arises and disappears before the traditional systems and labor intensive review systems can respond. If the risk does not materialize, then everything is fine. If it does, then the company may go out of business before it faces the next risk. In either event, the large amount of time required to obtain these products leaves many companies exposed to risks that they could easily avoid if a more automated system was available.

The underlying cause of all these problems is that insurance and most financial services are delivered in a manner that is similar to the U.S. manufacturing sector twenty five years ago when obtaining the right product required an army of people to sift through a variety of quotes, place an order and then monitor the orders to make sure what was ordered actually arrived on time. The manufacturing and retail sectors have replaced their old, labor-intensive systems with electronic supply chain systems that tightly link them with their suppliers. Using these systems, suppliers provide the specific products and services that are required for smooth operation "just-in-time". A similar system that would enable financial service firms to provide financial "products" like insurance, foreign exchange, capital and credit tailored to the specific situation on a "just-in-time" would clearly be beneficial. The system could also work in real time providing

One of the biggest problems with achieving this goal has been that there has been no agreed upon method for analyzing risk, liquidity and foreign exchange requirements and for communicating that information to financial service firms. It is worth noting at this point that while XML is widely touted as a panacea for inter-firm communication it is only useful in establishing the language for the communication - not the substance of what is being communicated. To satisfy all the potential providers of financial services, the

~~substance of the communication regarding risk, liquidity and foreign exchange requirements would have to overcome the limitations of traditional systems that:~~

~~1) Ignore intangible assets;~~

~~2) Ignore real options;~~

~~3) Analyze individual assets in isolation, and~~

~~4) Ignore or footnote contingent liabilities and other off balance sheet risk;~~

~~In light of the preceding discussion, it is clear that it would be desirable to have an automated, real time system that could quantify and communicate information to financial service providers regarding the full spectrum of risk transfer (and liquidity) needs for an enterprise in a way that that was supported by a detailed, rigorous evaluation of all the elements of the enterprise that create business value and business risk. Ideally, this system would be allow financial service firms to provide "just in time" and/or real time financial products and services in a manner that is customized to the exact needs of the enterprise using the system.~~

Please change the first two pages of the Summary of the Invention on pages 7 through 9 to read as shown below.

Change to:

It is a general object of the present invention to provide a novel and useful system for ~~on-line risk transfer that overcomes~~identifying and measuring the ~~limitations and drawbacks~~tangible and intangible elements of ~~the existing art that were described previously~~value using predictive models and vector creation algorithms.

A preferable object to which the present invention is applied is fully quantifying and ~~then satisfying~~ the ~~risk reduction needs for~~ value of a commercial business. Comprehensive quantification of enterprise ~~requirements~~value is enabled by:

1) Systematically analyzing and valuing contingent liabilities using real option algorithms as required to ensure that the most current information regarding the magnitude of potential liabilities is included in all analyses;

2) Developing an improved understanding of the ~~variability and risk~~ value associated with all elements of enterprise value – tangible and intangible;

3) Incorporating insights from the analyses of performance by asset management systems (i.e. Customer Relationship Management, Supply Chain Management, Brand Management, etc.) ~~and the analyses of risk by asset risk management systems (credit risk, currency risk, etc.)~~ for individual assets; and

4) Integrating or fusing the information from the first three items as required to develop a complete, three hundred sixty degree (360°) view of the ~~risk and~~ opportunities faced by the company~~;~~.

~~5) Clearly identifying the liquidity and foreign exchange position of the enterprise; and~~

~~6) Developing the optimal risk reduction program for the company within the constraints specified by the user.~~

The system of the present invention also calculates and displays an optimal value enhancement program for the commercial enterprise using the system. ~~Because information on liquidity and foreign exchange needs is developed and transmitted along with the risk information, the system of the present invention is also capable of functioning as an automated, on-line liquidity transfer system, alone or in combination with the risk transfer system.~~

~~The information for each enterprise using the system is continuously communicated in summary format to the central exchange (such as an insurance company or bank) that analyzes the information for all enterprises to:~~

~~1) Arrange swaps of risk, between enterprises with complementary, offsetting needs for a fee; and/or~~

~~2) Arrange for insurance for a larger fee as required to meet the needs of each enterprise using the system and the profit goals (and reserve requirements) of the firm operating the central exchange.~~

~~To provide the most secure system for transferring risk, the system of the present invention goes on to analyze the information provided by each enterprise and the firm operating the central exchange (hereinafter, the central exchange operator) to determine if standby credit lines and/or re-insurance are required. If either of these "back-up" facilities for capital are required, then the appropriate amount of standby credit and/or reinsurance is determined by the system of the present invention.~~

On page 13, please delete the descriptions of FIG. 7, FIG. 9 and FIG. 10 and change the description of FIG. 8 to read as shown below.

Change to:

FIG. 6A, FIG 6B and FIG. 6C are block diagrams showing the sequence of steps in the present invention that are utilized for initializing and operating the analysis bots; AND

~~FIG. 7 is a block diagram showing the sequence of steps in the present invention used for developing the optimal risk reduction strategy for each enterprise; and~~

FIG. 8~~7~~ is a block diagram showing the sequence of steps in the present invention used in ~~communicating the summary information,~~ printing reports~~, and receiving information concerning swaps and coverage from the central exchange;~~.

~~FIG. 9 is a block diagram showing the sequence in steps in the present invention used in operating the central exchange for risk transfer;~~

~~FIG. 10 is a diagram showing the files or tables in the exchange database (51) of the present invention that are utilized for data storage and retrieval during the processing in the innovative risk transfer system.~~

On page 15, please delete the paragraph at the bottom of the page (it continues to the top of page 16), modify the first paragraph on page 16 and delete the second paragraph on page 16 as shown below.

Change to:

~~The exchange database (51) contains tables for storing user input, extracted information and system calculations including an xml profile table (180), an exchange bot date table (181), a customer table (182), a risk products table (183), a swaps table (184), a customer profile table (185), an exchange payout history table (186), an exchange generic risk table (187), a liability scenario table (188), an asset position table (189), an external exchange database table (190), an asset forecasts table (191), an asset correlation table (192), an asset scenario table (193), an exchange simulations table (194), a contingent capital table (195), an optimal exchange mix table (196) and an exchange premium history table (157). The exchange database (51) can optionally exist as a datamart, data warehouse or departmental warehouse.~~

As shown in FIG. 3, the preferred embodiment of the present invention is a computer system (100) illustratively comprised of a user-interface personal computer (110) connected to an application-server personal computer (120) via a network (45). The application server personal computer (120) is in turn connected via the network (45) to a database-server personal computer (130). ~~The database-server personal computer (130) is also connected to the exchange-server personal computer (140).~~ The user interface personal computer (110) is also connected via the network (45) to an internet browser appliance (90) that contains browser software (800) such as Microsoft Internet Explorer or Netscape Navigator.

~~The exchange-server personal computer (140) has a read/write random access memory (141), a hard drive (142) for storage of the exchange database (51), a keyboard (143), a communications bus (144), a display (145), a mouse (146), a CPU (147) and a printer (148).~~

On pages 78 through 85, please delete the Risk Reduction Bot section as shown below.

Change to:

~~RISK REDUCTION BOTS~~

~~The flow diagram in FIG. 7 details the processing that is completed by the portion of the application software (400) that analyzes and develops a risk reduction strategy for the commercial enterprise using the system.~~

~~System processing in this portion of the application software (400) begins in a block 402. The software in block 402 checks the system settings table (140) in the application database (50) to determine if the current calculation is a new calculation or a structure change. If the calculation is not a new calculation or a structure change, then processing advances to a software block 412. Alternatively, if the calculation is new or a structure change, then processing advances to a software block 403.~~

~~The software in block 403 checks the bot date table (149) and deactivates any statistical bots with creation dates before the current system date. The software in block 403 then retrieves the information from the system settings table (140), the external database table (146), the element of value definition table (155), the element variables table (158) and the sentiment factor table (169) as required to initialize statistical bots for each causal value driver and market value factor.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of statistical bots, their primary tasks are to calculate and store statistics such as mean, median, standard deviation, slope, average period change, maximum period change, variance and covariance for each causal value driver and market value factor for every regime. Covariance with the market as a whole is also calculated for each value driver and market value factor. Every statistical bot contains the information shown in Table 47.~~

~~Table 47~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Regime~~
~~6. Value Driver or Market Value Factor~~

~~When bots in block 403 have identified and stored statistics for each causal value driver and market value factor in the statistics table (170), processing advances to a software block 404.~~

~~The software in block 404 checks the bot date table (149) and deactivates any risk reduction activity bots with creation dates before the current system date. The software in block 404 then retrieves the information from the system settings table (140), the external database table (146), the element of value definition table (155), the element variables table (158), the sentiment factor table (169) and the statistics table (170) as required to initialize risk reduction activity bots for each causal value driver and market value factor.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of risk reduction activity bots, their primary tasks are to identify actions that can be taken by the enterprise to reduce risk. For example, if one customer presents a significant risk to the enterprise, then the risk reduction bot might identify a reduction in the credit line for that customer to reduce the risk. Every risk reduction activity bot contains the information shown in Table 48.~~

~~Table 48~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Value driver or Market value factor~~

When bots in block 404 have identified and stored risk reduction activities in the risk reduction activity table (179), processing advances to a software block 405.

The software in block 405 checks the bot date table (149) and deactivates any extreme value bots with creation dates before the current system date. The software in block 405 then retrieves the information from the system settings table (140), the external database table (146), the element of value definition table (155), the element variables table (158) and the sentiment factor table (169) as required to initialize extreme value bots in accordance with the frequency specified by the user (20) in the system settings table (140).

Bots are independent components of the application that have specific tasks to perform. In the case of extreme value bots, their primary task is to identify the extreme values for each causal value driver and market value factor. The extreme value bots use the Blocks method and the peak over threshold method to identify extreme values. Other extreme value algorithms can be used to the same effect. Every extreme value bot activated in this block contains the information shown in Table 49.

Table 49

1. Unique ID number (based on date, hour, minute, second of creation)
2. Creation date (date, hour, minute, second)
3. Mapping information
4. Storage location
5. Method
6. Value driver or Market value factor

After the extreme value bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information from the system settings table (140), the external database table (146), the element of value definition table (155), the element variables table (158) and the sentiment factor table (169) and determine the extreme value range for each value driver or market value factor. The bot saves the extreme values for each causal value driver and market value factor in the statistics table (170) in the application database (50) and processing advances to a block 409.

The software in block 409 checks the bot date table (149) and deactivates any scenario bots with creation dates before the current system date. The software in block 409 then retrieves the information from the system settings table (140), the operation system table (144), the external database table (146), the advanced finance system table (147), the element of value definition table (155), the sentiment factors table (169) and the statistics table (170) as required to initialize scenario bots in accordance with the frequency specified by the user (20) in the system settings table (140).

Bots are independent components of the application that have specific tasks to perform. In the case of scenario bots, their primary task is to identify likely scenarios for the evolution of the causal value drivers and market value factors. The scenario bots use information from the advanced finance system and external databases to obtain forecasts for individual causal factors before using the covariance information stored in the statistics table (170) to develop forecasts for the other causal value drivers and factors under normal conditions. They also use the extreme value information calculated by the previous bots and stored in the statistics table (170) to calculate extreme scenarios. Every scenario bot activated in this block contains the information shown in Table 50.

Table 50

1. Unique ID number (based on date, hour, minute, second of creation)
2. Creation date (date, hour, minute, second)
3. Mapping information
4. Storage location
5. Type: Normal or Extreme
5. Enterprise

After the scenario bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and develop a variety of scenarios as described previously. After the scenario bots complete their calculations they save the resulting scenarios in the scenarios table (171) in the application database (50) and processing advances to a block 410.

The software in block 410 checks the bot date table (149) and deactivates any simulation bots with creation dates before the current system date. The software in block 410 then retrieves the information from the system settings table (140), the operation system table (144), the advanced finance system table (147), the element of value definition table (155), the external database table (156), the sentiment factors table (169), the statistics table (170), the scenarios table (171) and the generic risk table (178) as required to initialize simulation bots in accordance with the frequency specified by the user (20) in the system settings table (140).

Bots are independent components of the application that have specific tasks to perform. In the case of simulation bots, their primary task is to run three different types of simulations for the enterprise. The simulation bots run simulations of organizational financial performance and valuation using: the two types of scenarios generated by the scenario bots – normal and extreme, they also run an unconstrained genetic algorithm simulation that evolves to the most negative scenario. In addition to examining the economic factors that were identified in the previous analysis, the bots simulate the impact of generic risks like fire, earthquakes, floods and other weather-related phenomenal that are un-correlated with the economic scenarios. Every simulation bot activated in this block contains the information shown in Table 51.

Table 51

1. Unique ID number (based on date, hour, minute, second of creation)
2. Creation date (date, hour, minute, second)
3. Mapping information
4. Storage location
5. Type: Normal, Extreme or Genetic Algorithm
6. Enterprise

After the simulation bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and simulate the financial performance and value impact of the different scenarios. After the simulation bots complete their calculations, the resulting forecasts are saved in the simulations table (168) and the summary xml table (177) in the application database (50) and processing advances to a block 411.

~~The software in block 411 continually runs an analysis to define the optimal risk reduction strategy for each of the identified normal and extreme scenarios. It does this by first retrieving from the system settings table (140), the operation system table (144), the external database table (146), the advanced finance system table (147), the element of value definition table (155), the sentiment factors table (169), the statistics table (170), the scenario table (171), the risk reduction products table (173) and the risk reduction activity table (179) which is the information required to initialize the optimization algorithm. The software in the block determines the optimal mix of risk reduction products (derivative purchase, insurance purchase, etc.) and risk reduction activities (reducing credit limits for certain customers, shifting production from high risk to lower risk countries, etc.) for the company under each scenario given the confidence interval established by the user (20) in the system settings using a linear programming optimization algorithm. A multi criteria optimization is also run at this stage to determine the best mix for reducing risk under both normal and extreme scenarios. Other optimization algorithms can be used at this point to achieve the same result. In any event, the resulting product and activity mix for each set of scenarios and the combined analysis is saved in the optimal mix table (175) and the xml summary table (177) in the application database (50) and the revised simulations are saved in the simulations table (168) before processing passes to a software block 412. The shadow prices from these optimizations are also stored in the risk reduction products table (173) and the xml summary table (177) for use in identifying new risk reduction products that the company may wish to purchase and/or new risk reduction activities the company may wish to develop.~~

~~The software in block 412 checks the system settings table (140) in the application database (50) to determine if the current calculation is a new calculation or a structure change. If the calculation is not a new calculation or a structure change, then processing advances to a software block 502. Alternatively, if the calculation is new or a structure change, then processing advances to a software block 413.~~

~~The software in block 413 checks the bot date table (149) and deactivates any impact bots with creation dates before the current system date. The software in block 413 then retrieves the information from the system settings table (140), the operation system table (144), the external database table (146), the advanced finance system table (147), the element of value definition table (155), the simulations table (168), the sentiment factors table (169), the statistics table (170), the scenario table (171) and the optimal~~

~~mix table (175) as required to initialize value impact bots in accordance with the frequency specified by the user (20) in the system settings table (140).~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of impact bots, their primary task is to determine the value impact of each risk reduction product and activity – those included in the optimal mix and those that aren't - on the different scenarios. Every impact bot contains the information shown in Table 52.~~

~~Table 52~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Enterprise~~
~~6. Risk reduction product or activity~~

~~After the value impact bots are initialized by the software in block 413, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information as required to revise the simulations of enterprise performance and determine the risk reduction impact of each product on each simulation. The resulting forecast of value impacts are then saved in the risk reduction products table (173) or the risk reduction activity table (179) as appropriate in the application database (50) before processing advances to a block 414.~~

~~The software in block 414 prepares and displays a listing from highest impact to lowest impact for each risk reduction product under the normal scenarios, the extreme scenarios and the combined (multi-criteria) analysis using the prioritized listing display window (706). The optimal mix for the normal and extreme scenarios are determined by calculating the weighted average sum of the different scenarios where the weighting is determined by the relative likelihood of the scenario. The display identifies the optimal mix from the combined analysis as the recommended solution for enterprise risk reduction. At this point, the user (20) is given the option of:~~

1. ~~Editing (adding or deleting products and activities) from the recommended solution;~~

~~2. Selecting the optimal mix from the normal scenario;~~

~~3. Selecting and then editing the optimal mix from the normal scenarios;~~

~~4. Selecting the optimal mix from the extreme scenario;~~

~~5. Selecting and then editing the optimal mix from the extreme scenarios; or~~

~~6. Leaving the default choice in place.~~

~~After the user (20) has finished the review and the optional edit of the selected mix, any changes are saved in the optimal mix table (175) in the application database (50) and processing advances to a software block 502. It should be noted that the processing of the risk reduction bot segment can, with very minor changes, also be used to analyze the impact of value enhancing changes on the enterprise. This could include a value maximization analysis and/or a multi-criteria maximum value, minimum risk optimization.~~

Please change the Output section on pages 85 through 88 to read as shown below.

Change to:

The flow diagram in FIG. ~~8~~7 details the processing that is completed by the portion of the application software (500) that generates a summary of the risk, liquidity and foreign exchange position of the company, places orders to purchase the optimal mix of risk reduction products and optionally prints management reports. Processing in this portion of the application starts in software block ~~502~~515.

~~The software in block 502 checks the optimal mix table (175) in the application database (50) to determine which risk reduction activities have been included in the optimal mix. If risk reduction activities have been included in the optimal mix, then the software in this block prepares summaries of the changes and transmits them to the affected financial, operational and/or soft asset management system(s). For example, if the option to reduce the credit line for a certain customer has been accepted, then the customer relationship management system and the accounts receivable system will be updated with the new credit limit information by a transmission from the software in this block. Alternatively, if there are no risk reduction activities in the optimal mix, then processing advances directly to a software block 503.~~

~~The software in block 503 retrieves information from the system settings table (140) and the advanced finance system table (147) that is required to calculate the minimum amount of cash that will be available for investment in risk reduction during the next 36 month period. The system settings table (140) contains the minimum amount of cash and available securities that the user (20) indicated was required for enterprise operation while the advanced finance system table (147) contains a forecast of the cash balance for the enterprise for each period during the next 36 months. A summary of the available cash and cash deficits by currency, by month, by enterprise for the next 36 months is stored in a summary xml format in the xml summary table (177) during this stage of processing. After the amount of available cash for each enterprise is calculated and stored in the risk reduction purchase table (165), processing advances to a software block 504.~~

~~The software in block 504 assembles the previously developed summaries of cash position, foreign exchange requirements, risks, scenarios and statistics into a xml summary profile of the enterprise. This summary profile is transferred via the network (45) to a software block 604 to start the processing in block 600. The software in block~~

~~600 reviews the enterprise profile and develops a recommended list of products and/or swaps that the enterprise should purchase to reduce risk. The recommended list of products and/or swaps is then transmitted by a software block 616 via a network (45) to a software block 514.~~

~~After the software in block 504 transmits the summary profile, processing advances to a software block 507. The software in block 507 checks the summary profile to see if there are any new losses in the profile. If there are new losses, then the information regarding the losses is transmitted via a network (45) to a software block 618. After the software in block 618 analyzes the~~

~~The software in block 514 analyzes the risk reduction products and swaps transmitted by the exchange to determine the percentage reduction in financial performance volatility that their purchase will produce for the enterprise. If the previously completed sentiment analysis indicated that financial performance volatility was a driver of market value, then the software in block 514 will retrieve the required information from the sentiment factors table (169) and estimate the value increase that will be produced by the decreased volatility. The software in block 514 also confirms that the products and/or swaps recommended by the exchange can be purchased using available cash for a total expenditure, counting both prior purchases and planned purchases, that is less than or equal to the maximum investment amount established by the user (20) in system settings table (140). If the planned purchases are within the guidelines established by the user (20), then the software generates a purchase order for the additional risk reduction products and/or swaps. Alternatively, if there isn't available cash or if the planned purchase exceeds the expenditure guideline established by the user (20), then a message indicating the problem(s) is prepared. In any event, the software in block 514 displays the resulting message or purchase order to the user (20) via the purchase review data window (711). The purchase review data window (711) also displays the estimate of value increase, if any, that the implementation of the risk reduction program will provide. The user (20) can optionally edit or confirm the purchase order, increase the amount that can be spent on risk reduction or chose to purchase a mix that is not the optimal mix. After the user (20) completes his or her review and optional edit, the software in block 514 transmits any orders to purchase the risk reduction products that were approved via the network (45) to a software block 617 which accepts the order transmits a confirmation. The software at this point could, of course, initialize one or more bots to search the various web sites and exchanges to get~~

~~the best price for the company using the system of the present invention. In any event, the details of the purchase transaction and confirmation are then saved in the risk reduction purchase table (165) before processing advances to block 515.~~

The software in block 515 displays the report selection window (705) to the user (20). The user (20) optionally selects reports for printing. If the user (20) selects any reports for printing, then the information regarding the reports selected is saved in the reports table (164). After the user (20) has finished selecting reports, processing advances to a software block 516.

The software in block 516 checks the reports tables (164) to determine if any reports have been designated for printing. If reports have been designated for printing, then processing advances to a block 525. The software in block 525 sends the designated reports to the printer (118). After the reports have been sent to the printer (118), processing advances to a software block 527. Alternatively, if no reports were designated for printing, then processing advances directly from block 516 to block 527.

The software in block 527 checks the system settings table (140) to determine if the system is operating in a continuous run mode. If the system is operating in a continuous run mode, then processing returns to block 205 and the processing described previously is repeated. Alternatively, if the system is not running in continuous mode, then the processing advances to a block 528 where the system stops.

While the above description contains many specificity's, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of one embodiment thereof. Accordingly, the scope of the invention should be determined not by the embodiment illustrated, but by the appended claims and their legal equivalents.

On pages 88 through 98, please delete the Exchange section in its entirety as shown below.

~~EXCHANGE~~

~~The flow diagram in FIG. 9 details the processing that is completed by the portion of the application software (600) that analyzes information from a number of enterprises and arranges for risk "swaps" and/or the sale of risk reduction products to each enterprise at a price that meets the profit goals and reserve requirements of the exchange. The description below will follow the processing and activities of the system of the present invention when one new customer profile is transmitted to the exchange.~~

~~System processing in this portion of the application software (400) begins in a block 602. The software in block 602 checks the exchange bot date table (181) in the exchange database (51) and deactivates any data bots with creation dates before the current system date. The software in block 602 then retrieves the information from the xml profile table (180), the customer table (182), the risk products table (183), the swaps table (184), the customer profiles table (185) the generic risk table (187), the external exchange database table (190) and the contingent capital table (195) as required to initialize exchange data bots.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of exchange data bots, their primary tasks are to:~~

~~1. Store the latest version of the customer profile in the customer profile table (182);~~

~~2. Update the external exchange database table (190) with information required to analyze asset returns on existing and potential investments;~~

~~3. Update the exchange generic risk table (187); and~~

~~4. Update the contingent capital table (195).~~

~~Every exchange data bot contains the information shown in Table 53.~~

~~Table 53~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Type: Customer, Generic risk, Contingent Capital or External database~~

~~When the bots in block 604 have stored the profile for the customer transmitting data to the exchange in the customer profiles table (185), the generic risk information in the generic risk table (187), the contingent capital information in the contingent capital table (195) and the external data required for asset return analysis in the external exchange database table (190) in the exchange database (51), processing advances to a software block 605.~~

~~The software in block 605 checks the exchange bot date table (181) and deactivates any transfer bots with creation dates before the current system date for the customer transmitting data to the exchange. The software in block 605 then retrieves the information from the xml profile table (180), the customer table (182), the risk products table (183), the swaps table (184) and the customer profile table (185) as required to initialize transfer bots for the enterprise transmitting a summary profile to the exchange.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of transfer bots, their primary tasks are to identify swaps, existing product and new products that can be made to satisfy the risk transfer needs of the enterprise transmitting data to the exchange. For example, if one enterprise has a significant risk from oil prices dropping (a heating oil company, for example) and another enterprise faces a significant risk when oil prices rise (a trucking company, for example), then the transfer bot will identify the offsetting risk factors and record a swap. If the risk transfer can be completed by both an existing risk transfer product and a swap, then preference is given to the swap. Every transfer bot contains the information shown in Table 54.~~

~~Table 54~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Risk factor~~
~~6. Type: Swap, Existing product or New product~~
~~7. Amount(s)~~
~~8. Date(s)~~
~~9. Customer 1 (for swaps only)~~
~~... to~~
~~9 + n. Customer n (for swaps only)~~

~~After the transfer bot identifies the swaps, existing products and new products that will satisfy the needs of the enterprise for risk transfer the results are saved to the exchange database (51). Information on swaps is saved on the swaps table (184) and the customer profile table (185) and information on new products is saved in the risk products table (183) without a price. The price for new products will be established later in the processing. After data storage is complete, processing advances to a software block 609.~~

~~The software in block 609 checks the exchange bot date table (181) and deactivates any liability scenario bots with creation dates before the current system date. The software in block 605 then retrieves the information from the xml profile table (180), the customer table (182), the risk products table (183), the swaps table (184), the customer profile table (185), the exchange payout history table (186), the generic risk table (187) and the exchange premium history table (196) as required to initialize new liability scenario bots.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of liability scenario bots, their primary tasks are to create a series of scenarios estimating the net payout (premiums minus payout = net payout) associated the risks transferred via swaps or insurance from all customers. As with the prior analysis at the enterprise level, there are two types of scenarios developed at this stage of processing, normal scenarios and extreme scenarios. The scenarios are~~

developed by combining the information and statistics from summary profiles transmitted by the customers of the exchange with the exchange payout history, the exchange premium history and generic risk information. Every liability scenario bot activated in this block contains the information shown in Table 55.

Table 55

1. Unique ID number (based on date, hour, minute, second of creation)
2. Creation date (date, hour, minute, second)
3. Mapping information
4. Storage location
5. Type: Extreme or Normal

After the liability scenario bots are initialized, they retrieve the required information from the xml profile table (180), the customer table (182), the risk products table (183), the swaps table (184), the customer profile table (185), the exchange payout history table (186), the generic risk table (187), the external exchange database table (190) and the exchange premium history (196) before generating a series of net payout scenarios that are appropriate for the type of analysis being completed – extreme or normal. The bot saves the scenarios in the liability scenario table (188) in the exchange database (51) and processing advances to a block 610.

The software in block 610 continually completes analyses similar to those completed by the analysis bots in the enterprise portion of the system of the present invention. The software in this block uses the publicly available information stored in the external exchange database table (190) to complete the analyses shown in Table 56 for each equity investment listed in the asset position table (189) and described in data obtained from the external database (25).

~~Table 56~~

~~1. Identify market value factors causing changes in the equity market price;~~
~~2. Forecast the value of the current operation for the company as a function of the causal factors identified in 1 and prior performance using forecasting method for revenue, expense and capital change similar to that described in related U.S. Patent 5,615,109;~~
~~3. Forecast the allocation of industry real options to the company on the basis of relative causal intangible element strength using forecasting method similar to that described in related U.S. Patent 5,615,109; and~~
~~4. Forecast the income (dividends) provided by the equity as a function of the causal factors identified in 1 and prior performance~~

~~The results of the first three forecasts (items 2, 3 and 4 from Table 56) are saved in the asset forecasts table (191) in the exchange database (51) and the market value factors (item 1 from Table 56) are saved with the appropriate equity in the asset position table (189). The software in this block uses the publicly available information stored in the external exchange database table (190) to complete the analyses shown in Table 56 for each income generating investments (i.e. bonds or real estate) listed in the asset position table (189) and described in data obtained from the external database (25).~~

~~Table 57~~

~~1. Identify the market value factors causing changes in the market price of the investment~~
~~2. Forecast the income provided by the investment as a function of the causal factors identified in 1 and prior performance~~

~~The results of the forecast (items 2 from Table 57) are saved in the asset forecasts table (191) in the exchange database (51) and the market value factors (item 1 from Table 57) are saved with the appropriate investment in the asset position table (189). The software in block 610 then analyzes the covariance between the causal factors for each of the assets to determine the covariance between these assets under both normal and extreme conditions. The results of these analyses are then stored in the asset correlation table (192) before processing advances to a block 611.~~

~~The software in block 611 checks the exchange bot date table (181) and deactivates any asset scenario bots with creation dates before the current system date. The~~

~~software in block 610 then retrieves the information from the asset position table (189), the external exchange database table (190) and the asset correlation table (192) as required to initialize the asset scenario bots.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of asset scenario bots, their primary task is to identify likely scenarios for the evolution of the causal market value factors. The asset scenario bots use information from the external databases to obtain forecasts for individual causal factors before using the covariance information stored in the asset correlation table (192) to develop scenarios for the other causal factors under normal and extreme conditions. Every scenario bot activated in this block contains the information shown in Table 58.~~

~~Table 58~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Type: Normal or Extreme~~

~~After the asset scenario bots are initialized, they retrieve the required information and develop a variety of normal and extreme scenarios as described previously. After the scenario bots complete their calculations they save the resulting scenarios in the asset scenario table (193) in the exchange database (51) and processing advances to a block 612.~~

~~The software in block 612 checks the exchange bot date table (181) and deactivates any net capital scenario bots with creation dates before the current system date. The software in block 612 then retrieves the information from the liability scenario table (183), and the asset scenario table (193) as required to initialize net capital scenarios bots.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of net capital scenario bots, their primary task is to run four different types of simulations for the exchange. The net capital scenario bots run simulations of the exchange financial performance using the two types of scenarios~~

~~generated by the asset and liability scenario bots – normal and extreme. The net capital scenario bots also run an unconstrained genetic algorithm simulation that evolves to the most negative scenario and simulations specified by regulatory agencies. Every net capital scenario bot activated in this block contains the information shown in Table 59.~~

~~Table 59~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Type: Normal, Extreme, Genetic Algorithm or Compliance~~

~~After the net capital scenario bots are initialized, they retrieve the required information and simulate the financial performance of the exchange under the different scenarios. After the net capital scenarios complete their calculations, the resulting forecasts are saved in the exchange simulations table (194) in the exchange database (51) and processing advances to a block 613.~~

~~The software in block 613 checks the exchange bot date table (181) and deactivates any asset optimization bots with creation dates before the current system date. The software in block 613 then retrieves the information from the asset position table (189), the external exchange database table (190), the asset forecasts table (191), the asset correlation table (192), the asset scenario table (193), the exchange simulations table (194) and the as required to initialize asset optimization bots.~~

~~Bots are independent components of the application that have specific tasks to perform. In the case of asset optimization bots, their primary task is to determine the optimal mix of assets and risk reduction activities (purchase reinsurance and/or other contingent capital purchases, etc.) for the exchange under each scenario using a linear programming optimization algorithm that is constrained by any limitations imposed by regulatory requirements. A multi criteria optimization is also run at this stage to determine the best mix for maximizing value under both normal and extreme scenarios. Other optimization algorithms can be used at this point to achieve the same result. Every asset optimization bot activated in this block contains the information shown in Table 60.~~

~~Table 60~~

~~1. Unique ID number (based on date, hour, minute, second of creation)~~
~~2. Creation date (date, hour, minute, second)~~
~~3. Mapping information~~
~~4. Storage location~~
~~5. Type: Normal, Extreme or Combined~~

~~After the asset optimization bots complete their analyses, the resulting asset and contingent capital mix for each set of scenarios and the combined analysis is saved in the optimal exchage mix table (196) in the exchange database (51) and the revised simulations are saved in the exchange simulations table (194) before processing passes to a software block 614.~~

~~The software in block 614 prepares and displays the optimal mix of asset purchases, asset sales and contingent capital purchases for the normal, extreme and combined scenario analysis using the optimal mix review display window (712). The optimal mix for the normal and extreme scenarios are determined by calculating the weighted average sum of the different scenarios where the weighting is determined by the relative likelihood of the scenario. The display identifies the optimal mix from the combined analysis as the recommended solution for exchange value maximization. At this point, the exchange operator (21) is given the option of:~~

~~1) Editing (adding or deleting products and activities) from the recommended solution;~~

~~2) Selecting the optimal mix from the normal scenarios;~~

~~3) Selecting and then editing the optimal mix from the normal scenarios;~~

~~4) Selecting the optimal mix from the extreme scenarios;~~

~~5) Selecting and then editing the optimal mix from the extreme scenarios; or~~

~~6) Leaving the default choice in place.~~

~~After the exchange operator (21) has finished the review and the optional edit of the selected mix, any changes are saved in the optimal exchange mix table (196) in the exchange database (51). The new optimal mix is compared to the existing asset~~

~~position stored in the asset position table (189) and orders are generated to purchase assets, sell assets and/or purchase contingent capital as required to bring the current asset position in line with the new optimal mix. These orders are then transmitted via a network (45) to other exchanges on the internet. When the order confirmations are received, the asset position table (189) is updated with the new information and processing advances to a block 615. It is worth noting at this point that the processing described in blocks 611, 612 and 614 could also be used to manage an investment portfolio on a stand alone basis.~~

~~The software in block 615 prepares and displays the proposed prices for the risk transfer products and the swaps that are being offered to the customer using the price review display window (715). The list prices from the risk products table (183) are used for the existing risk products. Pricing for swaps are calculated by marking up the cost of the swap by a standard amount. The software in block 615 marks up the calculated breakeven price for any new risk transfer products that were introduced by the bots in block 605. At this point, the exchange operator (21) is given the option of:~~

~~1) Editing the recommended prices for any and all of the risk transfers – swaps, existing products and new products;~~

~~2) Accepting the recommended prices; or~~

~~3) Removing some of swaps and/or risk transfer products from the list.~~

~~After the exchange operator (21) completes the review, all price changes and the prices for any new risk transfer products are saved in the risk products table (183) before processing advances to a block 616.~~

~~The software in block 616 transmits the information regarding the products, swaps and pricing that will be used to transfer the risks identified in the initial xml risk transfer summary from the customer to block 514. The transmission to the enterprise is in a summary xml format that is similar to the one initially transmitted to the exchange by the enterprise.~~

~~As described previously, the user (20) can reject, edit and/or accept the proposed mix of products and swaps contained in the xml risk transfer summary via the purchase review window (711). The information regarding the decisions made regarding the accepted risk transfers (swaps or purchases) is communicated via a network (45) by the~~

~~software in block 514 to a software block 617. The software in block 617 accepts the confirmed orders, updates the information in the risk products table (183), the swaps table (184), the customer profiles table (185) and the exchange premium history table (197) before advancing to a software block 618.~~

~~The software in block 618 accepts input from block 507 regarding any new losses that are contained in the profiles being transmitted to the exchange. The software in block 618 verifies the loss is for an insured risk, updates the customer profiles table (185), updates the exchange payout history table (186) and arranges for payment of the claim in a manner that is well known. After the processing of claims is completed, exchange processing returns to block 604 and the process described above is repeated.~~

~~Thus, the reader will see that the system and method described above transforms extracted transaction data, corporate information, information from external databases and information from the internet into detailed valuations and risk analyses for specific elements of value within the enterprise and for the enterprise as a whole. The system and method described above goes on to use the detailed valuation and risk analysis information to develop and implement a comprehensive program of risk reduction activities and risk transfers specifically tailored to the enterprise using the system. The level of detail, breadth and speed of the risk analysis allows users of the system to manage their risks in an fashion that is superior to the method currently available to users of existing risk analysis systems and traditional insurance products.~~

~~Because the xml profiles used in the system (100) provide a comprehensive picture of the financial status of the companies transferring risk through the exchange, the system and method of the present invention can be used with essentially no modifications to provide an on-line transfer system for:~~

~~1. Foreign exchange;~~

~~2. Liquidity (aka credit);~~

~~3. Any combination of foreign exchange, liquidity and risk.~~

~~With relatively minor modifications the system of the present invention could be used to manage transfers of ownership rights alone or in combination with foreign exchange, liquidity and risk.~~

~~While the above description contains many specificity's, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of one preferred embodiment thereof. Accordingly, the scope of the invention should be determined not by the embodiment illustrated, but by the appended claims and their legal equivalents.~~

On pages 100 through 101, please delete the Bibliography in its entirety.

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